

**Integrative Biology 131 Examination I**  
**October 13, 2003**

Part I. Choose the best answer:

1. The layer closest to the sternum is the:
  - a. serous pericardium
  - b. epicardium
  - c. fibrous pericardium
  - d. myocardium
  
2. Which coat of an artery contains the endothelium?
  - a. tunica media
  - b. tunica adventitia
  - c. tunica intima
  - d. tunica brachialis
  
3. The interventricular sulcus houses the anterior and posterior coronary arteries. From where do they arise?
  - a. brachiocephalic artery
  - b. pulmonary artery
  - c. aortic arch
  - d. ascending aorta
  
4. Which of the following has a rich capillary bed?
  - a. hyaline cartilage
  - b. epithelium
  - c. skeletal muscle
  - d. an epiphyseal disc because it is the site of growing cartilage
  
5. Purkinje fibers:
  - a. are smaller than ordinary cardiac muscle cells
  - b. lie immediately beneath the epicardium
  - c. serve as the conducting mechanism of the heart
  - d. constitute the bundle of Hers
  
6. Papillary muscles are:
  - a. covered by epicardium
  - b. attached to the chordae tendinae
  - c. made of smooth muscle
  - d. synonymous with Purkinje fibers
  
7. During systole the:
  - a. semilunar valves close
  - b. atrioventricular valves open
  - c. left ventricular wall relaxes
  - d. atrioventricular valves close

8. The unpaired branches of the abdominal aorta include:
  - a. the renal artery
  - b. the gonadal artery
  - c. the common iliac artery
  - d. the celiac artery which branches to supply the stomach, liver, pancreas, and spleen
  
9. The framework of compact bone consists of:
  - a. Haversian systems
  - b. trabeculae
  - c. articular cartilage
  - d. yellow marrow
  
10. Blood vessels and nerves from the periosteum penetrate the compact bone through the:
  - a. Volkmann's canals
  - b. Haversian canals
  - c. endosteum
  - d. medullary cavity
  
11. Paget's disease is an example of a disorder in which bone-producing and bone-destroying cells become uncoordinated in their activities. Which cells might be involved?
  - a. astrocytes
  - b. megakaryocytes
  - c. osteoclasts
  - d. normoblasts
  
12. An example of a bone formed by intramembranous ossification is the:
  - a. humerus
  - b. femur
  - c. sternum
  - d. parietal
  
13. Concentric rings of calcified intercellular substance arranged around Haversian canals are called:
  - a. lacunae
  - b. trabeculae
  - c. lamellae
  - d. canaliculi
  
14. During fracture repair the new bone tissue that develops around the fractured area is called:
  - a. callus
  - b. fracture hematoma
  - c. metaphysis
  - d. center of ossification
  
15. Which of the following bones is not involved in the formation of part of the orbit?
  - a. ethmoid
  - b. sphenoid
  - c. lacrimal
  - d. temporal

16. The improper fusion of portions of which bone result in a cleft palate?
- maxilla
  - sphenoid
  - ethmoid
  - mandible
17. A patient with a lateral curvature of the spine has:
- kyphosis
  - lordosis
  - scoliosis
  - sway-back
18. A depression in or on a bone is known as a:
- meatus
  - fossa
  - foramen
  - tubercle
19. Ribs attached directly to the sternum by means of costal cartilage are referred to as:
- floating
  - deviating
  - false
  - true
20. A Pott's fracture is one which involves the lateral bone of the leg. Which bone is this?
- femur
  - tibia
  - fibula
  - ischium
21. The olecranon process is a projection of the:
- tibia
  - radius
  - ulna
  - humerus
22. The enlarged, palpable, terminal portion of the spine of the scapula is called the:
- glenoid projection
  - supraspinatous tubercle
  - acromial process
  - corocoid process
23. According to the sliding-filament theory of muscle contraction:
- the A band gets shorter
  - the Z lines move away from the A band
  - the Z lines move toward each other
  - the I bands change their length

24. Myofilaments are stacked in definite compartments partitioned by Z lines. Such compartments are called:
- sarcoplasm
  - sarcoplasmic reticulum
  - triads
  - sarcomeres
25. A cord of connective tissue that attaches a skeletal muscle to the periosteum of bone is called:
- aponeurosis
  - subserous fascia
  - deep fascia
  - tendon
26. During a muscular contraction:
- the origin moves toward the insertion
  - the insertion moves toward the origin
  - The muscular attachment of the pectoralis major to the humerus moves laterally.
  - The muscular attachment of the quadriceps femoris to the fibula tubercle flexes the knee.
27. A muscle that turns the palm upward is called a (an):
- plantaris
  - adductor
  - supinator
  - abductor
28. The facial muscle used to wrinkle the forehead is the:
- orbicularis oculi
  - mentalis innervated by the VII nerve
  - frontalis innervated by the III nerve
  - frontalis innervated by the VII nerve
29. A muscle used to abduct the arm is the:
- pectoralis major
  - brachialis
  - deltoid
  - brachioradialis
30. All the following are flexors of the knee except the:
- biceps femoris
  - semitendinous
  - rectus femoris
  - semimembranous
31. The process by which all blood cells are formed is called:
- erythropoiesis
  - leucopoiesis
  - hemopoiesis
  - platopoiesis

32. Cells that phagocytize disintegrating RBCs are found in the:
- spleen
  - kidney
  - thymus gland
  - connective tissue
33. Which of the following cells is an agranular leukocyte?
- neutrophil
  - eosinophil (acidophil)
  - lymphocyte
  - basophil
34. Platelets:
- produce megakaryocytes
  - are phagocytic
  - release thromboplastin to aid in clotting blood
  - have granules
35. The atrioventricular valve on the same side of the heart as the origin of the ascending aorta is the:
- pulmonary artery valve
  - tricuspid valve
  - mitral or bicuspid valve
  - pulmonary vein valve
36. Which of the following are involved in pulmonary circulation?
- superior vena cava, right atrium, and left ventricle
  - inferior vena cava, right atrium, and left ventricle
  - right ventricle, pulmonary arteries, and left atrium
  - left ventricle, aorta, and inferior vena cava
37. The first heart sound, the lub, is produced by the:
- closure of the semilunar valves
  - the opening of the semilunar valves
  - the closure of the atrioventricular valves
  - the opening of the coronary sinus valves
38. Which is not correct for the external oblique abdominal muscle or its aponeurosis?
- extends the vertebral column
  - protects and supports abdominal viscera
  - forms the inguinal canal
  - has a deep inguinal ring which facilitates an inguinal hernia
39. The iliotibial band allows for the insertion of the:
- gluteus medius
  - gluteus maximus
  - gluteus minimus
  - sartorius

40. Which is not a component of the femoral triangle?
- a. inguinal ligament
  - b. femoral nerve
  - c. femoral artery
  - d. iliac artery

Part II. Mark A for True; Mark B for False

41. The quadriceps femoris flexes the thigh and extends the leg.
42. The biceps femoris, part of the hamstrings, flexes the thigh and extends the knee.
43. Acidophils contain acid phosphatase, are increased with allergies such as asthma, and produce heparin for clotting blood.
44. All leukocytes represent the defense department of the body.
45. The reticulocyte is the precursor of the erythrocyte.
46. Leukocytes spend most of their lives in the blood vessels.
47. An aneurysm is a weakened wall of an artery or a vein.
48. The thymus gland is essential for producing T4 lymphocytes whose number is altered in AIDS.
49. The spleen is different from a lymph node because it filters blood and not lymph, a tissue fluid with lymphocytes.
50. Both the spleen and lymph nodes produce lymphocytes which phagocytize foreign substances.

HAVE SELF RESPECT.  
HAVE SELF CRITICISM.  
DO SOMETHING FOR SOMEONE ELSE EACH DAY.

(Answers on the next page.)

**Answers for IB 131 – Fall 2003 Midterm 1:**

1. C
2. C
3. D
4. C
5. C
6. B
7. D
8. D
9. A
10. A
11. C
12. D
13. C
14. A
15. D
16. A
17. C
18. B
19. D
20. C
21. C
22. C
23. C
24. D
25. D
26. B
27. C
28. D
29. C
30. C
31. C
32. A
33. C
34. C
35. C
36. C
37. C
38. A
39. B
40. D
41. A
42. B
43. B
44. A
45. A
46. B
47. A
48. A
49. A
50. B